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Section 2. Status of Pending Claims and Amendments:

Claims 1 - 7 and 11 - 13 and 21 - 23 have been allowed in this case in the Notice. Claims 8-10 were previously canceled. Claims 14 and 15 are currently amended to place them in immediate condition for allowance. Claims 16-20 are now cancelled to effect Applicant's election in response to the telephone Restriction Requirement, in favor of a divisional case, to be filed shortly.

1. (Allowed) A computer hardware and software-implemented method of reducing errors and uncertainty in construction projects for practical application in the field of architecture and the technological arts of construction and computer operations for efficient administration of construction contract bidding, letting and management processes, involving construction project work information included in construction project plans and construction project contracts and/or subcontracts, said plans including a plurality of construction plan sheet drawings of a construction project, said computer including a central processor and a computer readable memory device, and said software includes software code for controlling the operation of said computer, comprising the following steps in any operative order:

(a) applying at least one electronic overlay from a computer memory to a digitized construction plan sheet as a representational surface corresponding to a selected construction trade or category of construction work to be performed on said project, said overlay being aligned with the plan sheet permitting defining by ordered sets of coordinates, a plurality of topological subdivision regions of said at least one construction plan sheet, each of said plurality of subdivision regions uniquely identifying, delineating and locating a selected portion of the construction work, object or element depicted graphically on said at least one plan sheet;

(b) linking each of said plurality of overlay-defined subdivision regions to at least one of said construction project contracts or sub-contracts to accurately map the plan sheet depiction that identifies the selected portion of the construction work to be bid, to the correct contracts or sub-contract(s); and

(c) incorporating said linked regions into said contract to graphically reference the scope of work to be performed under said contract depiction on said plan sheets to enhance the precision, clarity and completeness of said work, thereby to reduce errors and omissions in construction performance under said contracts and/or sub-contracts.

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2. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 1, wherein said step of applying said overlay to define topological subdivision regions [defining step] includes:

- (a) inputting said at least one plan sheet as digitized electronic data to a computer data processing system including said central processor and computer-readable memory device;
- (b) storing said input plan sheet data as a digital data file in said computer-readable memory device;
- (c) defining in said plan sheet data said at least one subdivision region containing a portion of the project work by selecting points corresponding to at least 2-dimensional overlay essentially-orthogonal coordinates, said selected points defining areas in which said defined portion of the project work is graphically represented; and
- (d) storing said defined subdivision region as data in a table in said computer-readable memory device.

3. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 2, further including the steps of:

- (a) providing a table in said computer-readable memory that includes a plurality of project subcontract work categories, each of said work categories corresponding to the work to be performed under one of said plurality of subcontracts; and
- (b) linking in said computer-readable memory said at least one subdivision region with a selected one of said work categories to create a data structure correlating said at least one subdivision region with said selected work category.

4. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 3, further including the steps of:

- (a) providing in said computer-readable memory at least one subcontract document file; and
- (b) linking in said computer-readable memory said selected work category to said contract and/or subcontract document file(s) to create in said data structure a correlation between said selected work category and said subcontract document file, and a correlation between said at least one plan sheet subdivision region and said contract and/or subcontract document file(s).

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5. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 4, wherein said computer system includes a display device and a graphical user interface system further including the steps of:

(a) associating in said computer readable memory a selected icon file with said at least one subdivision region of said at least one plan sheet;

(b) displaying an image of said selected contract and/or subcontract document on said display device connected to said computer system;

(c) displaying said selected icon as an image superimposed upon said contract and/or subcontract image; and

(d) retrieving from said data structure an image of said subdivision region of said plan sheet in response to a selection of said icon using said graphic user interface to graphically display said portion of the work to be performed under said contract and/or subcontract.

6. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 4, further including the steps of:

(a) associating an index reference with said at least one subdivision region and said at least one plan sheet;

(b) printing said selected contract and/or subcontract document with said index reference included in said contract and/or subcontract document; and

(c) printing an image of said indexed subdivision region superimposed upon said plan sheet to reference at least a portion of the work to be performed under said contract and/or subcontract by plan subdivision information being included in said plan sheet images.

7. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 4, wherein said subdivision defining step is selected from at least one of the steps of:

(a) defining at least one closed boundary box [curve] coordinated with said plan sheet, said subdivision region comprising the plan area enclosed by said boundary;

(b) defining at least one trace path upon said at least one plan sheet, said trace path delimiting a trace area of said plan sheet lying within a predetermined distance from said path, said subdivision region comprising said trace area;

(c) defining at least one center point upon said at least one plan sheet, said center point

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delimiting an area of said plan sheet lying within a predetermined geometric boundary shape coordinate with said center point, said subdivision region comprising the plan area enclosed by said predetermined boundary shape; and

(d) defining a reference grid coordinate with said plan sheet, said grid dividing said sheet into a plurality of predefined sub-areas, and selecting one or more contiguous ones of said plurality of sub-areas, said subdivision region comprising said selected contiguous sub-areas.

8. (Previously Cancelled) [A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:

(a) defining at least one trace path upon said at least one plan sheet, said trace path delimiting a trace area of said plan sheet lying within a predetermined distance from said path, said subdivision region comprising said trace area.]

9. (Previously Cancelled) [A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:

(a) defining at least one center point upon said at least one plan sheet, said center point delimiting an area of said plan sheet lying within a predetermined geometric boundary shape coordinate with said center point, said subdivision region comprising the plan area enclosed by said predetermined boundary shape.]

10. (Previously Cancelled) [A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:

(a) defining a reference grid coordinate with said plan sheet, said grid dividing said sheet into a plurality of predefined sub-areas; and

(b) selecting one or more contiguous ones of said plurality of sub-areas, said subdivision region comprising said selected contiguous sub-areas.]

11. (Allowed) A method of reducing errors and uncertainty in construction projects as in claim 1, wherein said plans and said contracts and subcontracts are accessibly and retrievably stored in electronic form in said computer readable memory device, and which includes the step of providing an Internet web-server configured for remote access of said plans, contracts and subcontracts for

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rendering and display via said web-server and for bi-directional flow of information related thereto including at least one of data, bids, comments, edits and changes.

12. (Allowed) A computer data processing system for electronically inter-linking selected sections of construction project plans to bidding contracts to reduce errors and uncertainty in construction projects by enhancing the precision, clarity and completeness of both said plans and said contracts, wherein the scope of work of said project is depicted in said plans, said plans comprising at least one sheet, and wherein said project work is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of said project work, said data processing system comprising:

(a) a computer-readable memory means for storing at least one plan file including digital image information of said plan sheets, and for storing an overlay grid including essentially orthogonal coordinates;

(b) a computer display means connected to said memory means for displaying said plan sheet image;

(c) a computer processing means connected to said memory means for superimposing said overlay grid onto said plans to permit selection of coordinate information to define subdivision regions of said plans that uniquely bound and delineate selected portions of the project construction work depicted graphically on said plan sheet and for storing in said memory means said boundary defining information;

(d) a computer-operator interface means for selecting a closed boundary on said plan sheet image to define at least one subdivision region of said plan sheet image, said subdivision region corresponding to a portion of the project construction work depicted in said plans; and

(e) linking means connected to said memory means for linking said stored plan image and said stored boundary information to at least one bidding contract, so as to define a portion of the project work to be performed under said contract.

13. (Allowed) A computer data processing system as in claim 12 which includes a computer program including code for causing said computer system to be accessible by at least one remote user via the Internet.

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14. (Currently Amended) An application computer program product for use in reducing errors and uncertainty in construction projects by the inter-linking of selected portions of construction project plans to relevant bidding contracts to enhance the precision, clarity and completeness of both said plans and said contracts, wherein:

(i) the scope of work of said construction project is at least in part defined by said plans comprising at least one plan sheet;

(ii) said project is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of the construction [scope-of] project work; and

(iii) said computer program product is for controlling application operations of [operating on] a computer system including a processor [means], a memory [means], a display [means] and an operator input [means] device;

said computer application program product comprising a computer usable medium having computer readable program code [means] embodied in said medium, said computer readable program code comprising:

(a) a first program code [means] for causing said computer system to read files [a-file] stored in said memory [means], said files including an image of at least one of said plan sheets and an overlay grid to permit selection of coordinates information to define subdivision regions of said plans that uniquely bound and delineate selected portions of the project construction work depicted graphically on said plan sheets;

(b) a second program code [means] for causing said computer system to display said plan sheet image;

(c) a third program code [means] for causing said computer system to accept operator-selected inputs that [input operator-specified information to] define as information a boundary around at least one subdivision region of said plan sheet image, said subdivision region corresponding to a portion of the project work depicted in [defined by] said plans;

(d) a fourth program code [means] for causing said computer system to store said boundary-defining information in said memory [means]; and

(e) a fifth program code [means] for causing said computer system to link said stored plan image and said stored boundary information to at least one bidding contract, so as to more precisely, clearly and completely [said] define a portion of the project work to be performed under

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said contract.

15. (Currently Amended) A computer program product as in claim 14, wherein said product includes a sixth program code [~~means~~] for causing said computer system be accessible by at least one remote user via the Internet, said access of said remote user permitting said user to control the execution of at least one of said first through fifth program codes [~~means~~].

16. (Canceled) An electronic business method for construction contract bid and construction management control comprising:

a) ~~establishing a website [, including] that provides services selected from at least one of construction design [services], inter-linking of specific construction project plan images to related contracts and/or subcontracts for bidding on said contracts and subcontracts, builder and construction project control, and links to affiliates [links];~~

b) ~~[a website operation for providing] operating said website to provide said services to user subscribers, including inputting [of] by a website operator, of []specific information in response to user requests, and information and communications to users; and~~

c) ~~providing and configuring a computer data processing system for said interlinking and website operation.~~

17. (Canceled) An electronic business method as in claim 16 wherein;

a) ~~said links to affiliates include hyperlinks [to affiliates] that provide [providing] services [under] on a referral or commission fee basis, said affiliate including at least one of owner, developer, architects, contractors, engineers, [S]urveyors, subcontractors, lenders, insurers, accounting[,] service providers, legal service providers, and title services.~~

18. (Canceled) An electronic business method as in claim 17 wherein;

a) ~~said website operator interactively provides said inter linking services to at least one user subscriber selected from [including] owners, developers, architects, contractors, and subcontractors.~~

19. (Cancelled) An electronic business method as in claim 18 wherein;

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~~a) said website includes an operator managed secure project page accessible through said website for interactive display and rendering of linked plans and contracts, and exchange of e-mail information related to the project plan, bidding and construction phases of a particular project.~~

20. (Canceled) An electronic business method as in claim 16 wherein interaction between and among users and said operator is browser and e mailed enabled.

21. (Allowed) A method of reducing errors in construction projects as in claim 1 wherein said mapping of said overlay substantially orthogonal coordinates to said plans is provided by a system of almost-orthogonal equations having the property of progressively increasing transparency as the size of the subdivision cells is reduced.

22. (Allowed) A method of reducing errors in construction projects as in claim 2 wherein said mapping of said overlay substantially orthogonal coordinates to said plans is provided by a system of almost-orthogonal equations having the property of progressively increasing transparency as the size of the subdivision cells is reduced.

23. (Allowed) A method of reducing errors in construction projects as in claim 1 which includes the step of verifying completeness of mapping of the construction work, objects or elements by said computer processor executing code for at least one error detection algorithm that topologically proves completeness or non-duplication of topological subdivisions, by at least one of: a) comparing coordinates of subdivision region boundaries on each plan page to determine if there are any that are not contiguous with or overlap other regions, or b) summing the total area of all subdivision regions on a plan sheet and comparing that sum to the area in which work is depicted on said plan sheet, to determine if there are less than all elements of the plan sheet that have been mapped.

End of Section 2, Status of Claims and Amendments.